



Supplemental Fig. 1. Comparison of the phenotype of wild type and variegated leaf mutant *Csvl* in cucumber. Plants colonized from wild type and *Csvl* mutant plants grown for 60 d. The leaves of the 7th node were selected for leaf area measurement. ‘*’ indicate the significant difference of target between wild type and *Csvl* mutant with p value < 0.05. Data were presented as means \pm SD of five replicates. t test was conducted for statistical analysis.

<i>Cucumis sativus</i>	MASSLSRPPFLSSRTEGFSGLTSLSTDLSKLSFAVKISVGSRNKKLQIKAAGSTFCNVFRVTTGESHGGGVGCVLDGCPRRRFLSEADLQVLDLDR	99
<i>Cucumis melo</i>	MASSLSRPPFLSSRTEGFSGLTSLSTDLSKLSFAVKISVGSRNKKLQIKAAGSTFCNVFRVTTGESHGGGVGCVLDGCPRRRFLSEADLQVLDLDR	99
<i>Arabidopsis thaliana</i>	MASSLTSRSLSTKLGSL...SSIPSEERRLSSPAVQISLRTQTRKNFQIAAGSSVCTHFRVSTGESHGGGVGCVLDGCPRRRFLSEADLQVLDLDR	96
<i>Momordica charantia</i>	MASSLSRPPFLSSRTEGFSGLTSLSTDLSKLSFAVKISVGSRSZAKLQIKAAGSTFCNVFRVTTGESHGGGVGCVLDGCPRRRFLSEADLQVLDLDR	99
<i>Theobroma cacao</i>	MASSLTPRPFLLATKPN...SLSSDLCRLSFLSLHSVKKPRTHKKLQIKAAGSTFCNVFRVTTGESHGGGVGCVLDGCPRRRFLSEADLQVLDLDR	94
<i>Gossypium raimondii</i>	MASSLTPRPFLLATKPN...SLSSDLCRLSFLSLHSVKKPRTHKKLQIKAAGSTFCNVFRVTTGESHGGGVGCVLDGCPRRRFLSEADLQVLDLDR	94
Consensus	mass k g sl l ls is k qi a gs g frv t geshggvgvc dgcpr p e diq ldr	
<i>Cucumis sativus</i>	RRPGQSRIITPRKETDTCRILSGVINCITGTPIHVFVNPNDQRCIDYSEMSIAYRPSHADATYDMKYGRVWEGGRSSARETIGRVAAGVAKKILKE	199
<i>Cucumis melo</i>	RRPGQSRIITPRKETDTCRILSGVINCITGTPIHVFVNPNDQRCIDYSEMSIAYRPSHADATYDMKYGRVWEGGRSSARETIGRVAAGVAKKILKE	199
<i>Arabidopsis thaliana</i>	RRPGQSRIITPRKETDTCRILSGVINCITGTPIHVFVNPNDQRCIDYSEMSIAYRPSHADATYDMKYGRVWEGGRSSARETIGRVAAGVAKKILKE	196
<i>Momordica charantia</i>	RRPGQSRIITPRKETDTCRILSGVINCITGTPIHVFVNPNDQRCIDYSEMSIAYRPSHADATYDMKYGRVWEGGRSSARETIGRVAAGVAKKILKE	199
<i>Theobroma cacao</i>	RRPGQSRIITPRKETDTCRILSGVINCITGTPIHVFVNPNDQRCIDYSEMSIAYRPSHADATYDMKYGRVWEGGRSSARETIGRVAAGVAKKILKE	194
<i>Gossypium raimondii</i>	RRPGQSRIITPRKETDTCRILSGVINCITGTPIHVFVNPNDQRCIDYSEMSIAYRPSHADATYDMKYGRVWEGGRSSARETIGRVAAGVAKKILKE	194
Consensus	rrpgqsrittprketdctcr sgv g ttgtpihvfvpntdqrg dy ems ayrpsHADATYDMKYGRVWEGGRSSARETIGRVAAGVAKKILKE	
<i>Cucumis sativus</i>	LAGTEVLAVVSQVYKVVLPDGSVDEHTLMECHESNIVRCFPEYAEKMAAIDAVRTRGDSGGVVTCIVRNAPRGLGSPVFDKLEAFKAVVLSLPAE	299
<i>Cucumis melo</i>	LAGTEVLAVVSQVYKVVLPDGSVDEHTLMECHESNIVRCFPEYAEKMAAIDAVRTRGDSGGVVTCIVRNAPRGLGSPVFDKLEAFKAVVLSLPAE	299
<i>Arabidopsis thaliana</i>	FAGTEVLAVVSQVYKVVLPDGSVDEHTLMECHESNIVRCFPEYAEKMAAIDAVRTRGDSGGVVTCIVRNAPRGLGSPVFDKLEAFKAVVLSLPAE	296
<i>Momordica charantia</i>	LAGTEVLAVVSQVYKVVLPDGSVDEHTLMECHESNIVRCFPEYAEKMAAIDAVRTRGDSGGVVTCIVRNAPRGLGSPVFDKLEAFKAVVLSLPAE	299
<i>Theobroma cacao</i>	FAGTEVLAVVSQVYKVVLPDGSVDEHTLMECHESNIVRCFPEYAEKMAAIDAVRTRGDSGGVVTCIVRNAPRGLGSPVFDKLEAFKAVVLSLPAE	294
<i>Gossypium raimondii</i>	FAGTEVLAVVSQVYKVVLPDGSVDEHTLMECHESNIVRCFPEYAEKMAAIDAVRTRGDSGGVVTCIVRNAPRGLGSPVFDKLEAFKAVVLSLPAE	294
Consensus	gte layvsqv vvlp v h q e nivrcp peyaekmiaaid vr g s gvvvtciv n p glg pvfdkleea aka slpa	
<i>Cucumis sativus</i>	KGFEI GSGFAGTFLTGSEHND FWDENCRIRTVNRSGGIQGGISNGEINMRVAFKPTAFI GKKNVTVRKKEWDLIARCRHDCPVVPRVPMVEAM	399
<i>Cucumis melo</i>	KGFEI GSGFAGTFLTGSEHND FWDENCRIRTVNRSGGIQGGISNGEINMRVAFKPTAFI GKKNVTVRKKEWDLIARCRHDCPVVPRVPMVEAM	399
<i>Arabidopsis thaliana</i>	KGFEI GSGFAGTFLTGSEHND FWDENCRIRTVNRSGGIQGGISNGEINMRVAFKPTAFI GKKNVTVRKKEWDLIARCRHDCPVVPRVPMVEAM	396
<i>Momordica charantia</i>	KGFEI GSGFAGTFLTGSEHND FWDENCRIRTVNRSGGIQGGISNGEINMRVAFKPTAFI GKKNVTVRKKEWDLIARCRHDCPVVPRVPMVEAM	399
<i>Theobroma cacao</i>	KGFEI GSGFAGTFLTGSEHND FWDENCRIRTVNRSGGIQGGISNGEINMRVAFKPTAFI GKKNVTVRKKEWDLIARCRHDCPVVPRVPMVEAM	394
<i>Gossypium raimondii</i>	KGFEI GSGFAGTFLTGSEHND FWDENCRIRTVNRSGGIQGGISNGEINMRVAFKPTAFI GKKNVTVRKKEWDLIARCRHDCPVVPRVPMVEAM	394
Consensus	kgfe gsgf gtflltg ehnd f de g irt tnrsggiqggisnge i mrvafkpt ti kq tvtr k e e argndpcvvpvprvpmveam	
<i>Cucumis sativus</i>	VAVLVDPQLMACHGQCNLFFPINPELCEELSFVGVSKTTV	439
<i>Cucumis melo</i>	VAVLVDPQLMACHGQCNLFFPINPELCEELSFVGVSKTTV	439
<i>Arabidopsis thaliana</i>	VAVLVDPQLMACHGQCNLFFPINPELCEELQIQEQNATAL	436
<i>Momordica charantia</i>	VAVLVDPQLMACHGQCNLFFPINPELCEELSFVGVSKTTV	439
<i>Theobroma cacao</i>	VAVLVDPQLMACHGQCNLFFPINPELCEELSLNFFNFEFAN	434
<i>Gossypium raimondii</i>	VAVLVDPQLMACHGQCNLFFPINPELCEELSFVGVSKTTV	434
Consensus	v vl dqImaq qc lfpin lq	

Supplemental Fig. 2. Alignment of predicted amino acid sequences for chorismate synthase in different species of plants. The parts marked in the square frame are the three conserved areas of chorismate synthase.